

# RJP60D0DPM

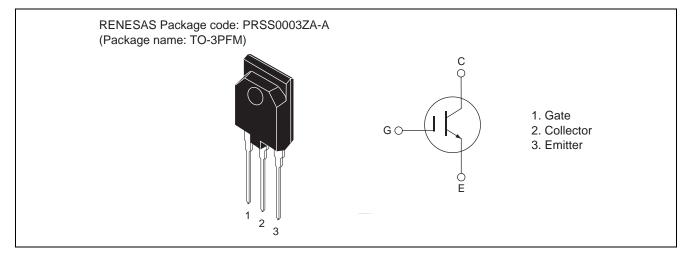
Silicon N Channel IGBT High Speed Power Switching Datasheet

R07DS0088EJ0200 Rev.2.00 Nov 16, 2010

### Features

- Short circuit withstand time (5 µs typ.)
- Low collector to emitter saturation voltage
- $V_{CE(sat)} = 1.6 \text{ V typ.}$  (I<sub>C</sub> = 22 A, V<sub>GE</sub> = 15V, Ta = 25°C)
- Gate to emitter voltage rating  $\pm 30$  V
- Pb-free lead plating and chip bonding

### Outline



### **Absolute Maximum Ratings**

				$(Ta = 25^{\circ}C)$
Item		Symbol	Ratings	Unit
Collector to emitter voltage		V <sub>CES</sub>	600	V
Gate to emitter voltage		V <sub>GES</sub>	±30	V
Collector current	Tc = 25°C	Ι <sub>C</sub>	45	A
	Tc = 100°C	Ι <sub>C</sub>	22	A
Collector peak current		ic(peak) Note1	90	A
Collector dissipation		P <sub>C</sub> <sup>Note2</sup>	40	W
Junction to case thermal impedance		θj-c <sup>Note2</sup>	3.125	°C/W
Junction temperature		Tj	150	°C
Storage temperature		Tstg	-55 to +150	°C

Notes: 1.  $PW \le 10 \ \mu s$ , duty cycle  $\le 1\%$ 

2. Value at Tc = 25°C



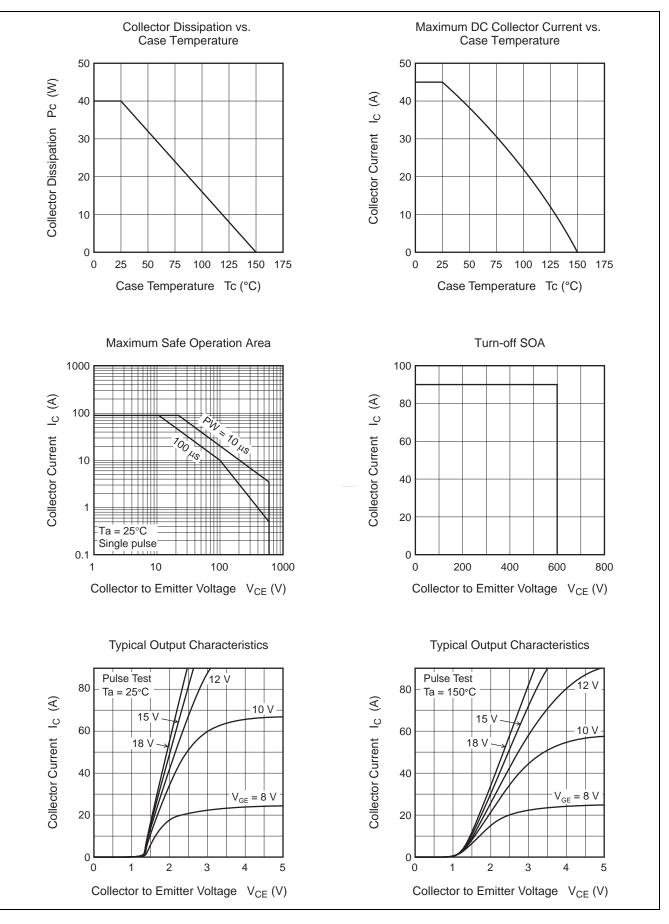
## **Electrical Characteristics**

						$(Ta = 25^{\circ}C)$
ltem	Symbol	Min	Тур	Max	Unit	Test Conditions
Zero gate voltage collector current	I <sub>CES</sub>	—	—	5	μA	$V_{CE} = 600 \text{ V}, V_{GE} = 0$
Gate to emitter leak current	I <sub>GES</sub>	—	—	±1	μA	$V_{GE} = \pm 30 \text{ V}, \text{ V}_{CE} = 0$
Gate to emitter cutoff voltage	V <sub>GE(off)</sub>	4.0	_	6.0	V	$V_{CE} = 10 \text{ V}, I_{C} = 1 \text{ mA}$
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	_	1.6	2.2	V	$I_{C} = 22 \text{ A}, V_{GE} = 15 \text{ V}^{\text{Note3}}$
	V <sub>CE(sat)</sub>	_	2.0	_	V	$I_{C} = 45 \text{ A}, V_{GE} = 15 \text{ V}^{\text{Note3}}$
Input capacitance	Cies	_	1050		pF	V <sub>CE</sub> = 25 V V <sub>GE</sub> = 0 f = 1 MHz
Output capacitance	Coes	_	70	_	pF	
Reveres transfer capacitance	Cres	_	32		pF	
Total gate charge	Qg	_	45		nC	V <sub>GE</sub> = 15 V V <sub>CE</sub> = 300 V I <sub>C</sub> = 22 A
Gate to emitter charge	Qge	_	6		nC	
Gate to collector charge	Qgc		20		nC	
Switching time	t <sub>d(on)</sub>		35		ns	$V_{CC} = 300 \text{ V}, \text{ V}_{GE} = 15 \text{ V}$ $I_C = 22 \text{ A}$ $\text{Rg} = 5 \Omega$ (Inductive load)
	tr	_	20	—	ns	
	t <sub>d(off)</sub>	_	90	_	ns	
	t <sub>f</sub>	_	70	_	ns	
Short circuit withstand time	t <sub>sc</sub>	3.0	5.0		μS	$V_{CC} \leq 360$ V, $V_{GE}$ = 15 V

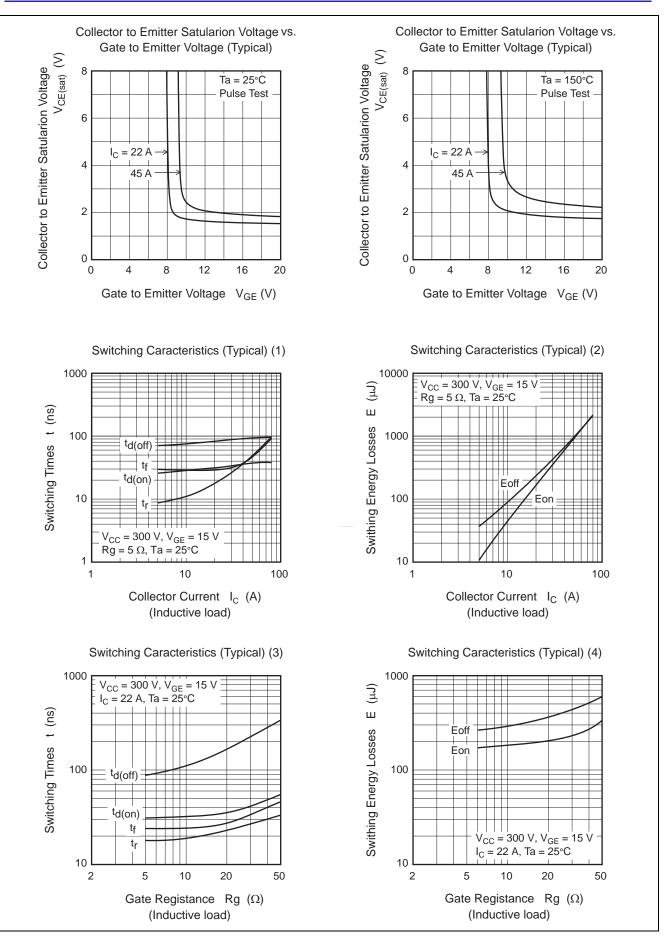
Notes: 3. Pulse test

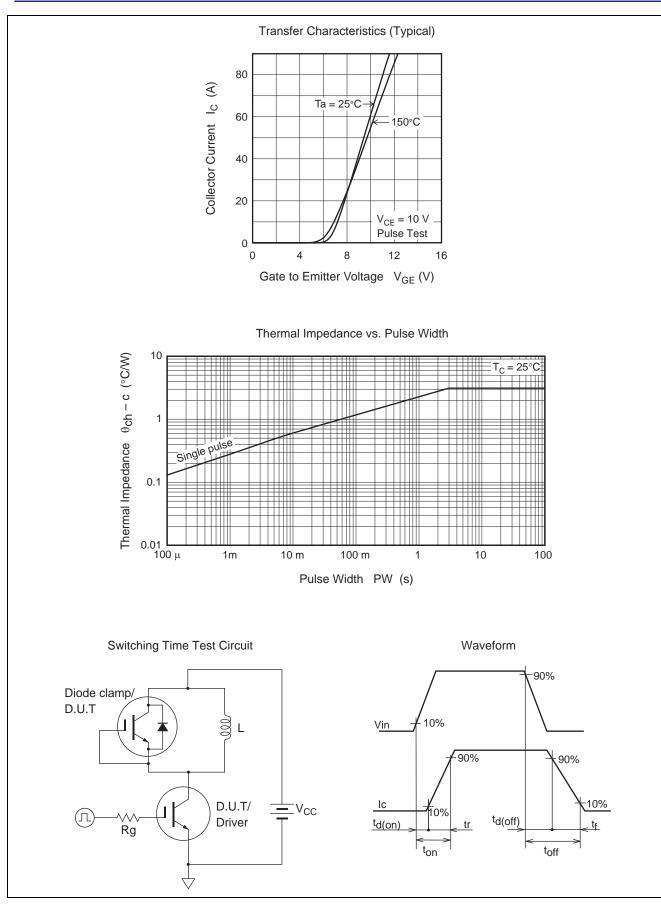


#### **Main Characteristics**

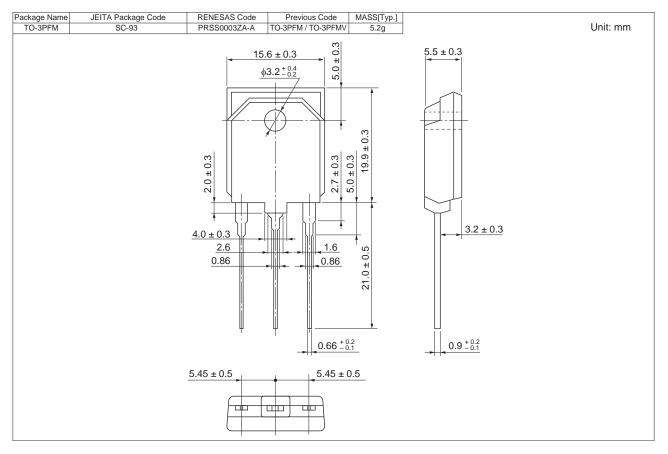


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### **Package Dimension**



## **Ordering Information**

Orderable Part Number	Quantity	Shipping Container
RJP60D0DPM-00-T1	360 pcs	Box (Tube)



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